

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method, comprising:

applying a filter to a block of transform coefficients;

identifying zero patterns in the a-block of transform coefficients to derive zero pattern information, wherein identifying zero patterns comprises determining the location of zero values or near zero values in the block of transform coefficients, wherein the filter increases the number of zero values, wherein a transform coefficient is determined to be near zero when it falls under a percentage of a value calculated using plurality of transform coefficients in the block;

~~determining whether there are more columns or rows of zeros in the block of transform coefficients by using zero pattern information;~~

performing one-dimensional inverse transforms on a subset of the total number of rows in the block of transform coefficients before performing one-dimensional inverse transforms on all of the columns in the block of transform coefficients when it is determined that there are more rows of zeros than columns of zeros;

requantizing and reencoding video data to obtain requantized video data having a bit rate lower than the bit rate of the received compressed video data, wherein the requantized video data has a bit rate reduced by a bit rate reduction ratio associated with zero patterns.

~~rescaling data to meet bandwidth constraints.~~

2. (Original) The method of claim 1, wherein the block of transform coefficients is an MPEG encoded block of 8x8 discrete cosine transform (DCT) coefficients.

3. (Previously Presented) The method of claim 1, further comprising setting a threshold for determining a near zero value in zero patterns.

- 4-5. (Canceled).

6. (Previously Presented) The method of claim 1, wherein performing one-dimensional inverse transforms further comprises performing one-dimensional transforms on all the columns in the block of transform coefficients.

7. (Canceled).
8. (Previously Presented) The method of claim 1, wherein the transcoding is performed on MPEG bitstreams.
9. (Original) The method of claim 1, wherein performing one-dimensional inverse transforms occurs during decoding.
10. (Original) The method of claim 9, wherein the decoding is performed on MPEG bitstreams.
11. (Currently Amended) ~~An apparatus for processing on the rows and columns of a block of transform coefficients, the apparatus comprising:~~
memory; and
a processor coupled with the memory, the processor configured to a) identify zero pattern information across rows associated with the block of transform coefficients, wherein identifying the zero information comprises determining the location of zero values or near zero values for multiple rows in the block of transform coefficients; b) perform one dimensional inverse transforms on a subset of rows of the block of transform coefficients using the zero pattern information; and c) rescale data to meet bandwidth constraints.
a filter operable to filter the block of transform coefficients;
inverse transform coding logic operable to identify zero patterns in the block of transform coefficients to derive zero pattern information, wherein the filter increases the number of zero values, wherein identifying zero patterns comprises determining the location of zero values or near zero values in the block of transform coefficients, wherein a transform coefficient is determined to be near zero when it falls under a percentage of a value calculated using plurality of transform coefficients in the block, wherein the inverse transform coding logic is further operable to performing one-dimensional inverse transforms on a subset of the total number of rows in the block of transform coefficients before performing one-dimensional inverse transforms on all of the columns in the block of transform coefficients when it is determined that there are more rows of zeros than columns of zeros;
requantization logic and a reencoder operable to obtain requantized video data having a bit rate lower than the bit rate of the received compressed video data, wherein the requantized video data has a bit rate reduced by a bit rate reduction ratio associated with zero patterns.

12. (Original) The apparatus of claim 11, wherein the block of transform coefficients is an MPEG encoded block of 8x8 DCT coefficients.

13-15. (Canceled)

16. (Previously Presented) The apparatus of claim 11, wherein performing one-dimensional inverse transforms further comprises performing one-dimensional transforms on all the columns in the block of transform coefficients.

17-23. (Canceled).

24. (Currently Amended) An apparatus, comprising:

means for applying a filter to the block of transform coefficients;

means for identifying zero patterns in ~~the a~~-block of transform coefficients to derive zero pattern information, wherein the filter increases the number of zero values, wherein identifying zero patterns comprises determining the location of zero values or near zero values in the block of transform coefficients, wherein a transform coefficient is determined to be near zero when it falls under a percentage of a value calculated using plurality of transform coefficients in the block;

~~means for determining whether there are more columns or rows of zeros in the block of transform coefficients by using zero pattern information;~~

means for performing one-dimensional inverse transforms on a subset of the total number of rows in the block of transform coefficients before performing one-dimensional inverse transforms on all of the columns in the block of transform coefficients when it is determined that there are more rows of zeros than columns of zeros;

means for requantizing and reencoding video data to obtain requantized video data having a bit rate lower than the bit rate of the received compressed video data, wherein the requantized video data has a bit rate reduced by a bit rate reduction ratio associated with zero patterns.

~~means for rescaling data to meet bandwidth constraints.~~

25. (Original) The apparatus of claim 24, wherein the block of transform coefficients is an MPEG encoded block (8x8 DCT coefficients).

26. (Previously Presented) The apparatus of claim 24, further comprising setting a threshold for determining a near zero value in zero patterns.

27-28. (Canceled).

29. (Previously Presented) The apparatus of claim 24, wherein performing one-dimensional inverse transforms further comprises performing one-dimensional transforms on all the columns in the block of transform coefficients.

30. (Original) The apparatus of claim 24, wherein performing one-dimensional inverse transforms occurs during transcoding.

31. (Original) The apparatus of claim 30, wherein the transcoding is performed on MPEG bitstreams.

32. (Original) The apparatus of claim 24, wherein performing one-dimensional inverse transforms occurs during decoding.

33. (Original) The apparatus of claim 32, wherein the decoding is performed on MPEG bitstreams.

34. (Currently Amended) A computer readable medium having computer code embodied therein, the computer readable medium comprising:

computer code for applying a filter to the block of transform coefficients;

computer code for identifying zero patterns in the a block of transform coefficients to derive zero pattern information, wherein the filter increases the number of zero values, wherein identifying zero patterns comprises determining the location of zero values or near zero values in the block of transform coefficients, wherein a transform coefficient is determined to be near zero when it falls under a percentage of a value calculated using plurality of transform coefficients in the block;

~~computer code for determining whether there are more columns or rows of zeros in the block of transform coefficients by using zero pattern information;~~

computer code for performing one-dimensional inverse transforms on a subset of the total number of rows in the block of transform coefficients before performing one-dimensional inverse transforms on all of the columns in the block of transform coefficients when it is determined that there are more rows of zeros than columns of zeros;

computer code for requantizing and reencoding video data to obtain requantized video data having a bit rate lower than the bit rate of the received compressed video data, wherein the requantized video data has a bit rate reduced by a bit rate reduction ratio associated with zero patterns.

~~computer code for rescaling data to meet bandwidth constraints.~~

35. (Original) The computer readable medium of claim 34, wherein the block of transform coefficients is an MPEG encoded block.

36. (Previously Presented) The computer readable medium of claim 34, further comprising setting a threshold for determining a near zero value in zero patterns.

37-38. (Canceled).

39. (Previously Presented) The computer readable medium of claim 34, wherein performing one-dimensional inverse transforms further comprises performing one-dimensional transforms on all the columns in the block of transform coefficients.

40. (Original) The computer readable medium of claim 34, wherein performing one-dimensional inverse transforms occurs during transcoding.

41. (Original) The computer readable medium of claim 40, wherein the transcoding is performed on MPEG bitstreams.

42. (Original) The computer readable medium of claim 34, wherein performing one-dimensional inverse transforms occurs during decoding.

43. (Original) The computer readable medium of claim 42, wherein the decoding is performed on MPEG bitstreams.

44-46. (Canceled)